

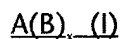
Please amend the above-identified patent application, without prejudice, as follows:

IN THE CLAIMS:

Replace the claims of record with the following:

1-2 (canceled)

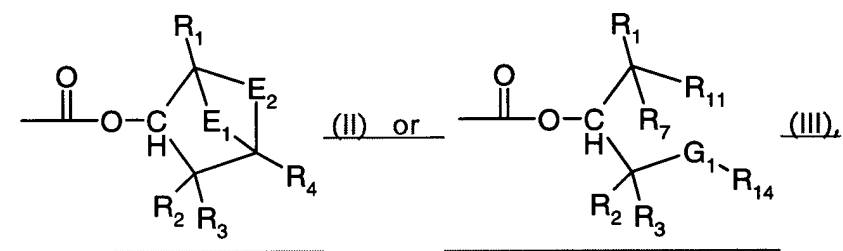
3. (currently amended) A process for mass colouration of a polymer, which comprises adding at least one compound of the formula (I)



where x is an integer from 1 to 8,

A is the radical of a chromophore of the quinacridone, anthraquinone, perylene, indigo, quinophthalone, indanthrone, isoindolinone, isoindoline, dioxazine, azo, phthalocyanine or diketopyrrolopyrrole series, this radical being linked with x B groups via one or more heteroatoms, these heteroatoms being selected from the group consisting of N, O and S and forming part of the radical A, and

B is hydrogen or a group of the formula



although at least one B group is not hydrogen and when x is from 2 to 8 the B groups may be identical or different,

E₁ is oxygen or is selected from the group consisting of methylene, methyleneoxy and ethylene, each member of the group being unsubstituted or substituted by one R₅ or by 2 radicals, R₅ and R₆, or is two separate radicals, R₇ and R₈, R₇ being attached to the same atom as R₁ and R₈ to the same atom as R₄,

E₂ is selected from the group consisting of methylene, ethylene, propylene and butylene, each member of the group being unsubstituted or substituted by one R₉ or by 2 radicals, R₉ and R₁₀, or is two separate radicals, R₁₁ and R₁₂, R₁₁ being attached to the same atom as R₁ and R₁₂ to the same atom as R₄,

G₁ is O or N(R₁₃),

R₁ is hydrogen, methyl, ethyl, methoxy or ethoxy.

R₂ and R₃ are independently hydrogen, C₁-C₈alkyl, C₁-C₈alkoxy, C₁-C₈alkoxy-C₂-C₈alkylene or C₁-C₈alkoxy-C₂-C₈alkyleneoxy.

R₄ is hydrogen, C₁-C₈alkyl, C₁-C₈alkoxy, C₁-C₈alkoxy-C₂-C₈alkylene, C₁-C₈alkoxy-C₂-C₈alkyleneoxy, C₅-C₆cycloalkyl, C₅-C₆cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical,

R₅, R₆, R₉, R₁₀ and R₁₂ are independently C₁-C₈alkyl or C₁-C₈alkoxy,
or R₆ and R₉ together are a direct bond,

R₇ and R₈ are independently hydrogen, C₁-C₈alkyl, C₁-C₈alkoxy, C₁-C₈alkoxy-C₂-C₈alkylene or C₁-C₈alkoxy-C₂-C₈alkyleneoxy.

R₁₁ is hydrogen, C₁-C₈alkyl or C₁-C₈alkoxy.

R₁₃ is methyl or ethyl, and

R₁₄ is C₁-C₈alkyl, C₅-C₆cycloalkyl, phenyl or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical,

it being possible for two methoxies attached to the same carbon atom to combine and form 1,2-ethylenedioxy, or for methoxy to combine with ethoxy attached to the same carbon atom to form 1,2- or 1,3-propylenedioxy, or for methoxy or ethoxy to combine with ethoxy attached to α - or β -enchained carbon to form dimethylmethylen,

and where additionally

a) R₁, R₂, R₃, R₇ or R₁₁ is hydrogen, and

b) when E₁ is two separate radicals R₇ and R₈ and E₂ is methylene or ethylene at least one of the following further conditions applies:

- R₁, R₂, R₃, R₄, R₇, R₈, R₉ or R₁₀ is methoxy or ethoxy;
- R₂, R₃, R₄, R₇, R₈, R₉ or R₁₀ is secondary C₃-C₈alkyl or tertiary C₄-C₈alkyl or C₃-C₈alkoxy;
- R₂, R₃, R₇ or R₈ is C₁-C₈alkoxy-C₂-C₈alkylene or C₁-C₈alkoxy-C₂-C₈alkyleneoxy;

or

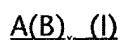
R₄ is C₅-C₆cycloalkyl, C₅-C₆cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered heterocyclic radical according to claim 1

to the polymer before or during processing, the processing taking the form of extrusion, injection moulding or fibre spinning at 220 to 330°C.

4. (original) An engineering plastic having a glass transition point (T_g) of 220 to 330°C, preferably polyolefin, polyester, polyamide or a polyimide, polysulfone, polyether sulfone, polyphenylene oxide, polyarylene, polyarylene sulfide, polyepoxide, polyphenylene oxide or ABS, pigmented according to claim 3.

5. (original) An engineering plastic according to claim 4 in the form of a fibre.

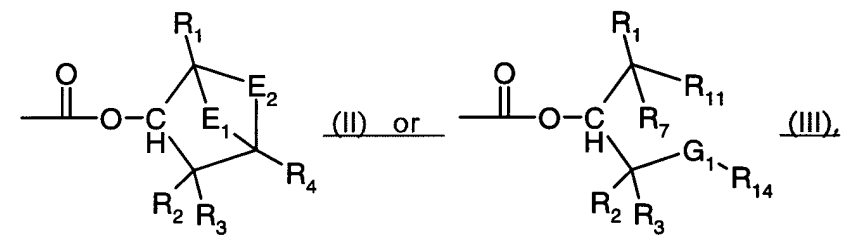
6. (currently amended) A process for pigmenting a porous material, which comprises at least one compound of the formula (I)



where x is an integer from 1 to 8,

A is the radical of a chromophore of the quinacridone, anthraquinone, perylene, indigo, quinophthalone, indanthrone, isoindolinone, isoindoline, dioxazine, azo, phthalocyanine or diketopyrrolopyrrole series, this radical being linked with x B groups via one or more heteroatoms, these heteroatoms being selected from the group consisting of N, O and S and forming part of the radical A, and

B is hydrogen or a group of the formula



although at least one B group is not hydrogen and when x is from 2 to 8 the B groups may be identical or different,

E_1 is oxygen or is selected from the group consisting of methylene, methyleneoxy and ethylene, each member of the group being unsubstituted or substituted by one R_5 or by 2 radicals, R_5 and R_6 , or is two separate radicals, R_7 and R_8 , R_7 being attached to the same atom as R_1 and R_8 to the same atom as R_4 ,

E_2 is selected from the group consisting of methylene, ethylene, propylene and butylene, each member of the group being unsubstituted or substituted by one R_9 or by 2 radicals, R_9 and R_{10} ,

or is two separate radicals, R_{11} and R_{12} , R_{11} being attached to the same atom as R_1 and R_{12} to the same atom as R_{14} .

G_1 is O or $N(R_{13})_2$.

R_1 is hydrogen, methyl, ethyl, methoxy or ethoxy.

R_2 and R_3 are independently hydrogen, C_1 - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkoxy- C_2 - C_8 alkylene or C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy.

R_4 is hydrogen, C_1 - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkoxy- C_2 - C_8 alkylene, C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy, C_5 - C_6 cycloalkyl, C_5 - C_6 cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical.

R_5 , R_6 , R_9 , R_{10} and R_{12} are independently C_1 - C_8 alkyl or C_1 - C_8 alkoxy, or R_6 and R_9 together are a direct bond.

R_7 and R_8 are independently hydrogen, C_1 - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkoxy- C_2 - C_8 alkylene or C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy.

R_{11} is hydrogen, C_1 - C_8 alkyl or C_1 - C_8 alkoxy.

R_{13} is methyl or ethyl, and

R_{14} is C_1 - C_8 alkyl, C_5 - C_6 cycloalkyl, phenyl or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical.

it being possible for two methoxies attached to the same carbon atom to combine and form 1,2-ethylenedioxy, or for methoxy to combine with ethoxy attached to the same carbon atom to form 1,2- or 1,3-propylenedioxy, or for methoxy or ethoxy to combine with ethoxy attached to α - or β -enchained carbon to form dimethylmethylene.

and where additionally

a) R_1 , R_2 , R_3 , R_7 or R_{11} is hydrogen, and

b) when E_1 is two separate radicals R_7 and R_8 and E_2 is methylene or ethylene at least one of the following further conditions applies:

- R_1 , R_2 , R_3 , R_4 , R_7 , R_8 , R_9 or R_{10} is methoxy or ethoxy;
- R_2 , R_3 , R_4 , R_7 , R_8 , R_9 or R_{10} is secondary C_3 - C_8 alkyl or tertiary C_4 - C_8 alkyl or C_3 - C_8 alkoxy;
- R_2 , R_3 , R_7 or R_8 is C_1 - C_8 alkoxy- C_2 - C_8 alkylene or C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy;

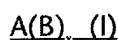
or

R_4 is C_5 - C_6 cycloalkyl, C_5 - C_6 cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered heterocyclic radical according to claim 1,

in liquid form or dissolved in an inert liquid in a weight concentration of at least 25%, penetrating into the pores of the porous material and thereafter being thermally converted into a pigment of the formula $A(H)_x$ (VI).

7. (original) Material pigmented according to claim 6, selected from anodized aluminium and sintered boridic material.

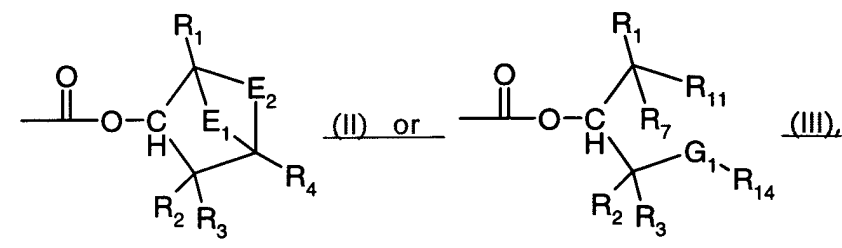
8. (original) High molecular weight organic material having a glass transition point (T_g) of 140°C to 220°C and containing in its bulk 0.1 to 10% by weight of a compound of the formula (I)



where x is an integer from 1 to 8,

A is the radical of a chromophore of the quinacridone, anthraquinone, perylene, indigo, quinophthalone, indanthrone, isoindolinone, isoindoline, dioxazine, azo, phthalocyanine or diketopyrrolopyrrole series, this radical being linked with x B groups via one or more heteroatoms, these heteroatoms being selected from the group consisting of N, O and S and forming part of the radical A, and

B is hydrogen or a group of the formula



although at least one B group is not hydrogen and when x is from 2 to 8 the B groups may be identical or different,

E_1 is oxygen or is selected from the group consisting of methylene, methyleneoxy and ethylene, each member of the group being unsubstituted or substituted by one R_5 or by 2 radicals, R_5 and R_6 , or is two separate radicals, R_7 and R_8 , R_7 being attached to the same atom as R_1 and R_8 to the same atom as R_4 .

E_2 is selected from the group consisting of methylene, ethylene, propylene and butylene, each member of the group being unsubstituted or substituted by one R_9 or by 2 radicals, R_9 and R_{10} .

or is two separate radicals, R_{11} and R_{12} , R_{11} being attached to the same atom as R_1 and R_{12} to the same atom as R_4 .

G_1 is O or N(R_{13}).

R_1 is hydrogen, methyl, ethyl, methoxy or ethoxy.

R_2 and R_3 are independently hydrogen, C_1 - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkoxy- C_2 - C_8 alkylene or C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy.

R_4 is hydrogen, C_1 - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkoxy- C_2 - C_8 alkylene, C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy, C_5 - C_6 cycloalkyl, C_5 - C_6 cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical.

R_5 , R_6 , R_9 , R_{10} and R_{12} are independently C_1 - C_8 alkyl or C_1 - C_8 alkoxy, or R_6 and R_9 together are a direct bond.

R_7 and R_8 are independently hydrogen, C_1 - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkoxy- C_2 - C_8 alkylene or C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy.

R_{11} is hydrogen, C_1 - C_8 alkyl or C_1 - C_8 alkoxy.

R_{13} is methyl or ethyl, and

R_{14} is C_1 - C_8 alkyl, C_5 - C_6 cycloalkyl, phenyl or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical.

it being possible for two methoxies attached to the same carbon atom to combine and form 1,2-ethylenedioxy, or for methoxy to combine with ethoxy attached to the same carbon atom to form 1,2- or 1,3-propylenedioxy, or for methoxy or ethoxy to combine with ethoxy attached to α - or β -enchained carbon to form dimethylmethylene.

and where additionally

a) R_1 , R_2 , R_3 , R_7 or R_{11} is hydrogen, and

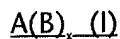
b) when E_1 is two separate radicals R_7 and R_8 and E_2 is methylene or ethylene at least one of the following further conditions applies:

- R_1 , R_2 , R_3 , R_4 , R_7 , R_8 , R_9 or R_{10} is methoxy or ethoxy;
- R_2 , R_3 , R_4 , R_7 , R_8 , R_9 or R_{10} is secondary C_3 - C_8 alkyl or tertiary C_4 - C_8 alkyl or C_3 - C_8 alkoxy;
- R_2 , R_3 , R_7 or R_8 is C_1 - C_8 alkoxy- C_2 - C_8 alkylene or C_1 - C_8 alkoxy- C_2 - C_8 alkyleneoxy;

or

R_4 is C_5 - C_6 cycloalkyl, C_5 - C_6 cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered heterocyclic radical, based on the total weight.

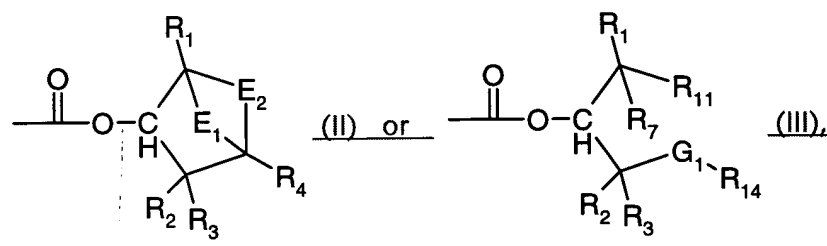
9. (original) A thermochromic material comprising a polymer coloured in the mass by a product obtainable by partial thermal decomposition of a compound of the formula (I)



where x is an integer from 1 to 8,

A is the radical of a chromophore of the quinacridone, anthraquinone, perylene, indigo, quinophthalone, indanthrone, isoindolinone, isoindoline, dioxazine, azo, phthalocyanine or diketopyrrolopyrrole series, this radical being linked with x B groups via one or more heteroatoms, these heteroatoms being selected from the group consisting of N, O and S and forming part of the radical A, and

B is hydrogen or a group of the formula



although at least one B group is not hydrogen and when x is from 2 to 8 the B groups may be identical or different,

E₁ is oxygen or is selected from the group consisting of methylene, methyleneoxy and ethylene, each member of the group being unsubstituted or substituted by one R₅ or by 2 radicals, R₅ and R₆, or is two separate radicals, R₇ and R₈, R₇ being attached to the same atom as R₁ and R₈ to the same atom as R₄,

E₂ is selected from the group consisting of methylene, ethylene, propylene and butylene, each member of the group being unsubstituted or substituted by one R₉ or by 2 radicals, R₉ and R₁₀, or is two separate radicals, R₁₁ and R₁₂, R₁₁ being attached to the same atom as R₁ and R₁₂ to the same atom as R₄,

G₁ is O or N(R₁₃),

R₁ is hydrogen, methyl, ethyl, methoxy or ethoxy,

R₂ and R₃ are independently hydrogen, C₁-C₈alkyl, C₁-C₈alkoxy, C₁-C₈alkoxy-C₂-C₈alkylene or C₁-C₈alkoxy-C₂-C₈alkyleneoxy,

R₄ is hydrogen, C₁-C₈alkyl, C₁-C₈alkoxy, C₁-C₈alkoxy-C₂-C₈alkylene, C₁-C₈alkoxy-C₂-C₈alkyleneoxy, C₅-C₆cycloalkyl, C₅-C₆cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical.

R₅, R₆, R₉, R₁₀ and R₁₂ are independently C₁-C₈alkyl or C₁-C₈alkoxy, or R₆ and R₉ together are a direct bond.

R₇ and R₈ are independently hydrogen, C₁-C₈alkyl, C₁-C₈alkoxy, C₁-C₈alkoxy-C₂-C₈alkylene or C₁-C₈alkoxy-C₂-C₈alkyleneoxy.

R₁₁ is hydrogen, C₁-C₈alkyl or C₁-C₈alkoxy.

R₁₃ is methyl or ethyl, and

R₁₄ is C₁-C₈alkyl, C₅-C₆cycloalkyl, phenyl or a 5- or 6-membered, saturated or singly to triply unsaturated heterocyclic radical.

it being possible for two methoxies attached to the same carbon atom to combine and form 1,2-ethylenedioxy, or for methoxy to combine with ethoxy attached to the same carbon atom to form 1,2- or 1,3-propylenedioxy, or for methoxy or ethoxy to combine with ethoxy attached to α - or β -enchained carbon to form dimethylmethylene.

and where additionally

a) R₁, R₂, R₃, R₇ or R₁₁ is hydrogen, and

b) when E₁ is two separate radicals R₇ and R₈ and E₂ is methylene or ethylene at least one of the following further conditions applies:

- R₁, R₂, R₃, R₄, R₇, R₈, R₉ or R₁₀ is methoxy or ethoxy;
- R₂, R₃, R₄, R₇, R₈, R₉ or R₁₀ is secondary C₃-C₈alkyl or tertiary C₄-C₈alkyl or C₃-C₈alkoxy;
- R₂, R₃, R₇ or R₈ is C₁-C₈alkoxy-C₂-C₈alkylene or C₁-C₈alkoxy-C₂-C₈alkyleneoxy;

or

R₄ is C₅-C₆cycloalkyl, C₅-C₆cycloalkoxy, phenyl, phenoxy or a 5- or 6-membered heterocyclic radical or by two compounds, selected from the group consisting of compounds of the formula (I) and pigments of the formula A(H)_x (VI).

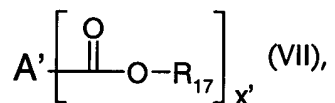
10. (original) A thermochromic material according to claim 9, which is comprised within a composite, preferably within a security item.

11-24 (canceled).

25. (original) A binary or ternary mixture including 60 to 99.9% by weight of a compound of the formula (I) and 0.1 to 40% by weight of one or two thermally more labile compounds of the same chromophore class with an A' that differs from A.

26. (original) A mixture according to claim 27, which is a binary mixture of 99.5 to 95% by weight of a compound of the formula (I) and 0.5 to 5% by weight of a thermally more labile compound of the same chromophore class with an A' that differs from A.

27. (original) A compound according to claim 25, wherein the thermally more labile compound of the same chromophore class with an A' that differs from A is a compound of the formula



where x' is an integer from 1 to 8 and A' is the radical of a chromophore of the quinacridone, anthraquinone, perylene, indigo, quinophthalone, indanthrone, isoindolinone, isoindoline, dioxazine, azo, phthalocyanine or diketopyrrolopyrrole series, this radical being linked with x' -COOR₁₇ groups via one or more heteroatoms, these heteroatoms being selected from the group consisting of N, O and S and forming part of the radical A' and R₁₇ being any desired tertiary group.

28. (original) A compound according to claim 27, wherein said R₁₇ radicals are selected from the group consisting of tert-butyl, tert-amyl, 2-methyl-3-buten-2-yl, 2-methyl-3-buten-2-yl, 4-oxa-2-pentyl and 4,7-dioxa-1-methyl-2-octyl.

29-31. (canceled)
